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ECO-FRIENDLY OZONE STERILIZATION ON ROTATABLE OLED

HP INC

Eco-Friendly Ozone Sterilization on Rotatable OLED

Abstract

This invention is to apply a corona-discharged ozone sterilization process on flexible OLED touch display by rotating dual flexible OLED touch screens to prevent and avoid the infection in contact with the virus or bacteria on OLED screen to cause the diseases, which is highly suitable to apply in meeting room or public areas such as banks and libraries.

Background

There is a risk to have the infection in contact with the virus or bacteria on OLED screen to cause the diseases such as Covid-19 by operating multi-media devices in public information communication display devices.

Invention Description

Develop a corona-discharged ozone sterilization process on flexible anti-fingerprint OLED touch display by rotating dual flexible OLED touch screens for public information communication, which can be designed for the application in bank, mall, supermarket, and government agencies. Eye Motion Tracking Using Infrared Sensor – OLED display will be rotated to the other side of OLED display through in-line ozone sterilization when the 2nd person is going to operate OLED display by eye motion tracking via infrared sensor. There are two kinds of designs including rotatable OLED display by dual inline ozone generator in Figure 1 and single inline ozone generator in Figure 2. The corona-discharge ruptures the stable oxygen molecule and forms two oxygen radicals. These radicals can combine with oxygen molecules to form ozone as shown in Figure 3 for corona-discharged ozone sterilization mechanism.

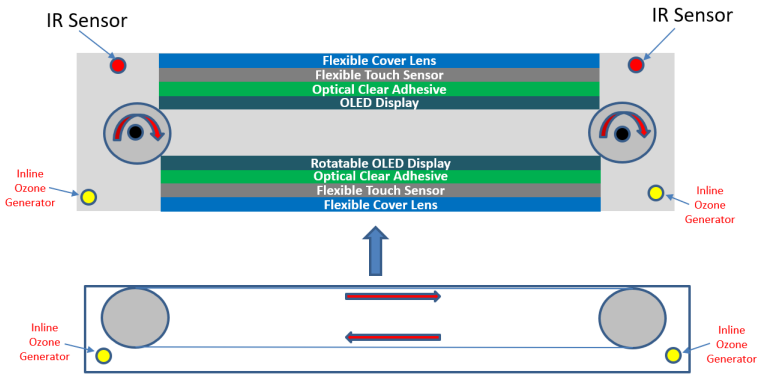

Figure 1. Rotatable OLED Display by Dual Inline Ozone Generator

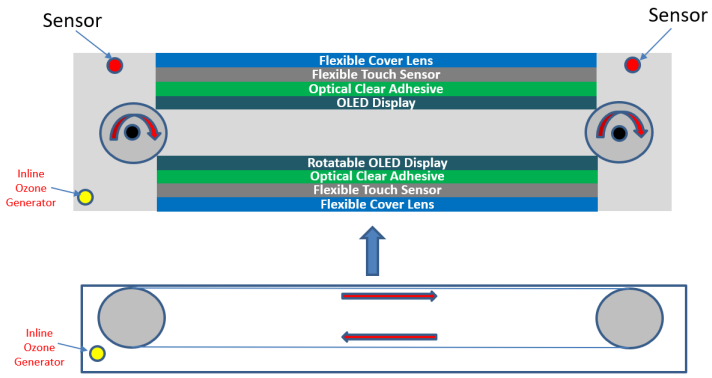

Figure 2. Rotatable OLED Display by Single Inline Ozone Generator

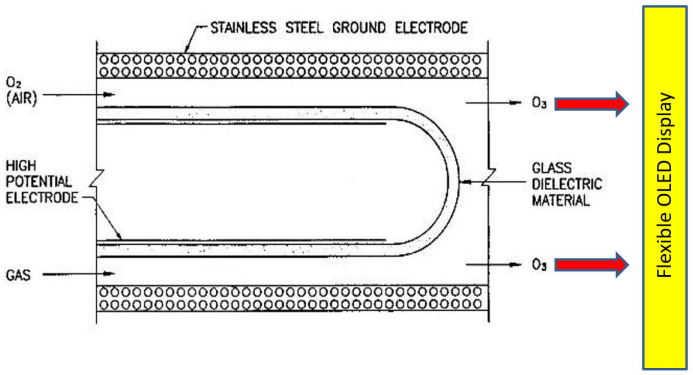

Figure 3. Corona-Discharged Ozone Sterilization Mechanism

Advantages

- Prevent and avoid the infection in contact with the virus or bacteria on OLED screen to cause the diseases.
- There is a risk to have the infection in contact with the virus or bacteria on OLED screen to cause the diseases such as Covid-19 by operating multi-media devices in public information communication display devices.
- Ozone is also highly efficient at killing bacteria, viruses, and protozoa.
- Ozone does not require transportation or storage of dangerous materials.
- Ozone is more effective than chlorine in destroying viruses and bacteria.
- There are no harmful residuals that need to be removed after ozonation because ozone decomposes rapidly.
- Unlike chemical approaches to water disinfection, ozone sterilization provides rapid, effective inactivation of microorganisms through a physical process.
- When bacteria, viruses and protozoa are exposed to the germicidal wavelengths of ozone sterilization, they are rendered incapable of reproducing and infecting.

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